June 4, 2002

US Department of Transportation
Dockets Management Facility
Room PL-401
400 Seventh St. SW
Washington, D.C. 20590

Docket No. FHWA-2001-11130
Work Zone Safety

Attached are comments to Docket No. FHWA-2001-11130, for the Advance Notice of Proposed Rulemaking, submitted by the American Traffic Safety Services Association (ATSSA) for consideration.

Since 1969, ATSSA has represented companies and individuals in the traffic control and roadway safety industry. Over 1,800 members of the association provide the majority of roadway safety features, services and materials used on our nation's roadways.

ATSSA's members represent virtually every area within the roadway safety industry, including a significant amount of public transportation agency personnel. From work zones to signs, guardrail to pavement marking, ATSSA members manufacture, install, maintain or remove these products on our nation’s roadways.

RAW

The American Traffic Safety Services Association (ATSSA) is pleased to provide comments to the docket for this Advanced Notice of Proposed Rulemaking. ATSSA represents manufacturers, suppliers and contractors / installers of temporary traffic control devices and permanent infrastructure safety devices including signage, markings, guardrail, crash cushions, barriers, etc. ATSSA member contractors are often "on the front line" in work zones. Additionally, approximately 500 public officials and agencies also belong to the association. ATSSA has promoted the advancement of roadway safety for over 32 years.

Question #1*: Should there be a National policy to promote improved mobility and safety in highway construction and maintenance? If so, should the National policy be incorporated into the regulation or issued separately as guidance that outlines guidelines and best practices for implementation?*

ATSSA's Comment: There should be a National policy to promote improved mobility and safety in work zones. In developing this policy, care should be taken not to reduce the agency's emphasis on safety in order to advance objectives regarding mobility.

This policy should have the force of a regulation, and should be coordinated with other federal agencies (e.g. OSHA). ATSSA recommends that FHWA serve as the "lead agency" so that there is not confusion in the "contractor marketplace" regarding which regulations, or which version of regulations, "govern" work zone activities.

Question #2*: Are the current provisions of 23 CFR 630, subpart J adequate to meet the mobility and safety challenges of road construction and maintenance projects encountered at all stages of project evolution? If they are not adequate, what are the provisions and/or sections that need to be enhanced and/or modified to ensure mobility and safety in and around work zones?*

ATSSA's Comment: After review of this regulation, ATSSA would like to respond to two individual areas contained within the current regulation.

Responsible person*. The highway agency shall designate a qualified person at the project level who will have the primary responsibility and sufficient authority for assuring that the TCP and other safety aspects of the contract are effectively administered. While the project or resident engineer may have this responsibility on large complex projects, another person should be assigned at the project level to handle traffic control on a full-time basis.*

This section must clearly define the term "qualified person" and **the amount of experience and training** required to meet this definition. With the complexity of today's work zones, it is imperative that the responsible person be certified by one of the various

training organizations. Not only should the term “qualified person” be defined, but the FHWA should also establish **minimum qualifications for trainers** in order to ensure a proper level of training. Of course, state DOTs would be free to supplement these minimums with state-based requirements.

Training*. All persons responsible for the development, design, implementation, and inspection of traffic control shall be adequately trained.*

All persons that design or implement traffic control plans should be trained to a national standard. The FHWA should establish minimum standards while providing states the flexibility to add to the standards depending upon state requirements. Furthermore, either FHWA or the states must conduct periodic reviews of training providers to ensure compliance with the MUTCD and other relative regulations and standards. Additionally, minimum qualifications should be established for all trainers in order to provide a reasonable assurance that work zone training is delivered in a knowledgeable and professional manner.

All work zone training courses should be accredited by an independent council comprised of individuals from the FHWA, state and local transportation agencies. This accreditation process should include a biennial review of all courses to ensure compliance with current practices and regulatory standards. The council should also establish minimum requirements for trainers. Examples of such requirements are included in the discussion below.

Given below are suggestions for a framework for training standards for those being trained as well as trainers. While this framework is intended to serve as a “straw man” for discussion, ATSSA feels strongly that such standards should be a strict requirement for all federal-aid projects.

Flaggers: Flaggers are often the first line of defense for roadway workers, particularly on two-lane roads, know to be our most dangerous roadways. They also provide significant information and direction to motorists. Far too often new workers are simply shown a “training” video that explains the proper techniques for flagging operations. With this inadequate level of “training,” they are then sent to flag.

Although the use of video instruction has its place, it is not a stand-alone technique. This is no way to educate flaggers who control the safety of both the workers and the motorists. In a video-only approach, far to little investment is made in either the principles of adult education or the benefits of teacher-student verbal interaction. Given below are suggestions for a better framework for flagger training:

- FHWA should set a minimum classroom training requirement. We suggest that this be at least 4 total hours.
- All students should be tested before they are allowed to take worker and motorist safety in their hands. Minimum testing levels and “pass” requirements should be established.
- The curriculum should include live training and demonstrations of proper flagging techniques. No more than 25% of the training should be video.
- There should be personal instruction of proper flagging techniques for each student.

- Class sizes should be limited (e.g. no more than 15 or 20 at a time) to increase the interaction between student and instructor.

Flagger Instructors: Requirements for flagger instructors should be sufficiently stringent to ensure a high quality of instruction. The following should be considered:

- FHWA should establish a minimum classroom training requirement. We suggest that this should be at least the Entry Level *and* Intermediate levels of training outlined below, as well as specialized flagger training.
- All trainers should be tested before they are certified as trainers. Minimum testing levels and "pass" requirements should be established.
- The curriculum should be primarily live training. No more than 20% of the total training should be via video instruction.

Entry Level Traffic Control Personnel: More stringent requirements for this group of workers should be considered to raise the minimum levels of education. Far too many entry level traffic control personnel don't receive the bare minimum level of education to improve the operational performance of the work zone. The following should be considered in setting a basic framework:

- Each student should attend at least an eight-hour course. In addition to basic traffic control (MUTCD) the course should incorporate the elements of a non-supervisory capacity and include standards, uniformity, fundamental principles, traffic control and other safety devices as well as pedestrian and worker safety issues and techniques for the installation, maintenance and removal of the work zone.
- All students should be tested. Minimum testing levels and "pass" requirements should be established.

Intermediate Level Traffic Control Personnel: This group of supervisory level personnel has the most impact on the performance of the work zone. When trouble arises in the work zone, these are the "go-to" men and women. Consequently, training requirements should be at a higher level than for entry level personnel, including:

- Meet the requirements of the Entry Level Personnel as outlined above *and* attend at least a sixteen classroom-hour intermediate course. The following elements should be included in this course level:
  - Inspection and maintenance of traffic control devices
  - Legal aspects of traffic control
  - Supervisory skills
  - Driver expectations
  - Partnering
  - Professionalism scenarios
  - Decision making processes
  - "Hands-on design exercises of temporary traffic control plans.
- All students should be tested. Minimum testing levels and "pass" requirements should be established.

- The FHWA should strongly consider language that also encourages agencies to certify these highly trained individuals.

Entry Level and Intermediate Trainer Requirements

The level of trainer experience is extremely critical. A basic tenet of adult education is that adults learn by interaction, not by sitting and watching videos or listening to a "talking head." Consequently, trainers must be experts in the field so as to be able to engage students and respond to situational questions knowledgeably.

Entry Level and Intermediate trainers should pass *both* the Entry Level and Intermediate Level courses with a grade of 90% or greater. Additionally, adult training techniques, the completion of a 4-hour flagger course with a passing grade of 90% or greater and minimum of three years of work zone supervisory experience should be required.

Instructors for the Intermediate Course level, should have a civil engineering degree *or* a minimum of seven years experience in the temporary traffic control field and be certified.

Advanced Level Traffic Control Designer: With the emergence of newer software programs and technology that will assist in designing better work zones, now is the time to establish minimum training requirements for traffic control plan designers. The FHWA may want to consider these options:

- Require that these individuals meet the previous Entry Level and Intermediate Level requirements *and* pass a design level course.
- Approximately 30-40% of the course should be "hands-on" exercises in traffic control design.
- The curriculum should also include:
  - Human factor elements
  - Fundamental traffic engineering concepts
  - Construction Techniques
  - Roadway design
  - Drafting skills
- Each student should pass a test with a required grade. We suggest 80% at this level.

Advanced Level Instructor Requirements: Since this person has the highest level of responsibility, the following minimums should be established:

- Instructors should have a civil engineering degree or a minimum of five years experience as a temporary traffic control supervisor.
- A minimum of three years of actual work zone design experience.
- Some adult education training or experience.
- Have held an Intermediate Level certification for at least three years.

Question #3*: Should work zone regulations be stratified to reflect varying levels and durations of risk to road users and workers, and disruptions to traffic? What would be the most appropriate stratification factors (e.g. duration, length, lanes affected, Average Daily Traffic [ADT], road classification, expected capacity reduction, potential impacts on local network and businesses)?*

ATSSA's Comment: Work zone regulations should be stratified by expected capacity reduction and Average Daily Travel (ADT). These two factors have the most impact on mobility and improved air quality (cars idling in queues) and could improve the road users' satisfaction with road construction.

Question #4*: Currently, there are several definitions for work zone, as defined by the MUTCD, ANSI D16 (proposed), NCUTLO and NHTSA. These definitions, even though similar in basic structure and implication, differ in length and the degree of detail addressed. Should there be a common National definition for work zone to bring about uniformity? If so, what should the common National definition be?*

ATSSA's Comment: There should be a national definition of the work zone. With work zone fatalities at an all time high, the FHWA must establish a national definition that can be understood by law enforcement personnel and utilized as a means for better data collection. The proposed ANSI D16 definition would be a good start but many work zone crashes occur prior to the vehicle entering the advanced warning area, typically from the build up of a queue. If we are to gather accurate data of crashes in the work zone we must begin training the law enforcement community on the causal effects of work zones and their relationship to crashes. ATSSA would encourage the FHWA to establish a national definition and then work with law enforcement associations to better train the officers investigating these crashes to aid in the collection of more precise data.

Transportation Planning and Programming

Question #5*: How, if at all, are impacts to road users due to road construction and maintenance part of the management and operations considerations that are addressed in transportation plan development?*

ATSSA's Comment: For many construction and maintenance projects the road user's needs are not taken into account in the early stages of development. This has to change as better traffic management plans are incorporated well in advance of the design phase of the project. Having agencies consider road user impacts, prior to the design phase, would assist in development of better traffic control/management plans.

Question #6*: To what extent should the metropolitan and statewide transportation planning processes address cross-cutting policy issues that may contribute to increases in project costs (for example, the use of more durable materials, life-cycle costing, complete closure of facilities, information sharing on utilities, etc.)? Is it appropriate to consider the impact of construction and maintenance projects to road users in planning for future roadway improvements at the metropolitan level? At the statewide level? At the corridor level?*

ATSSA's Comment: We feel that it is appropriate to consider impacts of work zones on road users at the metropolitan and corridor levels. This consideration will have the

broadest benefit for the majority of the road users due to the fact that the most congested highways are in metropolitan areas.

Question #7*: What data and methods are currently available to address the above considerations? What else would be needed to support such considerations in the metropolitan and statewide transportation planning processes? At the corridor level?*

ATSSA's Comment: Data and methods that are currently used to address these considerations are often limited to ADTs and speed levels. More information needs to be available to designers in order to improve the performance of work zones. For example, *vehicle characteristics* and *hourly travel profile* information may assist designers in providing better traffic control/management plans.

Project Design for Construction and Maintenance

Question #8*: How can the FHWA encourage agencies to incorporate the above considerations (life-cycle cost analysis, alternative project scheduling and design strategies, etc.) in the decisionmaking process for evaluating alternative project designs? What are the most appropriate ways to include these considerations in project design?*

ATSSA's Comment: The FHWA should consider making all traffic control devices, especially those features that have been accepted, by the FHWA, as crashworthy to be eligible for 100% federal funding. This would encourage the local and state agencies to incorporate these features into their standard operating procedures and plan designs.

Question #9*: Can user cost be a useful measure to assess alternative means to design and implement work zones? What weight should agencies assign to user costs as a decisionmaking factor in the alternative evaluation process? Should analytical tools, such as QuickZone, QUEWZ-98, etc., be used for the evaluation of various design alternatives and their estimated impact to the public? What other impact measures (delay, speed, travel time, crashes) should agencies estimate and use for alternatives evaluation?*

ATSSA's Comment: The consideration of user costs can be a useful measure to assess alternative measures to design and implement work zones. User costs should have considerable influence on the decision making process. New tools, such as Quick Zone™ and QUEWZ-98™ will provide invaluable information during the evaluation process. Additionally, delay, travel time and crash history should influence the decision making process.

Question #10*: Given the fact that utility delays have been cited as roadblocks to efficient project delivery, what should be done to address this issue?*

ATSSA's Comment: Reducing the negative impact of utility delays should start at the issuance of a permit. The FHWA, through the division offices, should work with state highway agencies and the MPOs to establish guidelines to minimize traffic disruptions and improve mobility. To achieve this task, consideration should be given to developing enforcement policies that can improve mobility in utility work zones. Additionally, utilities who set up stationary work zones for longer than four hours should be required to have traffic control plans and safety training of their workers.

Managing for Mobility and Safety in and Around Work Zones

Question #11*: The current regulation specifies the requirement for TCPs for work zones, but does not address the issues of sustained traffic management and operations, or traffic enforcement methods and partnerships. Should the scope of TCPs be expanded to include such considerations? What are the most relevant practices or technologies that should be considered in planning for traffic management, enforcement and operations? What are the most appropriate ways to facilitate the inclusion of such considerations in traffic control planning?*

ATSSA's Comment: The scope of traffic control plans should be broadened to incorporate traffic management and operations planning. Integrating more ITS related components and systems into the work zone will provide better traveler information and traffic management during the life of the work zone. The most appropriate and effective way to integrate this process is to provide a safety and/or mobility incentive (financial) to the state to be passed down to the contractor and traffic control sub-contractor.

Question #12*: Should TCPs address the security aspects of construction of critical transportation infrastructure? Should TCPs address the security aspects of work zone activities in the vicinity of critical transportation or other critical infrastructure?*

ATSSA's Comment: Traffic control plans should address security issues in the event of an emergency. Additionally, this would also better serve the road user in the event of an unplanned incident. Maximizing the capacity of the roadway, in the work zone, should be the prime consideration of a national emergency and an unplanned incident. Consideration should be given to establishing detailed and appropriately signed detours that utilize more ITS applications. Such emergency management plans should incorporate both permanent devices (e.g. evacuation route signage) and temporary devices (e.g. portable changeable message signs).

Question #13*: How should TCPs address ADA requirements?*

ATSSA's Comment: Integrating additional requirements for disabled pedestrians traversing a work zone should be considered. In establishing such additional requirements, FHWA might consider such factors as project location (e.g. urban vs. rural), normal pedestrian traffic counts at the location, and project duration. For example, ADA requirements might be more stringent for longer duration activities than for those that might be in place for only two or three days. There should be no additional ADA requirements for mobile work zones as by their nature they do not typically interrupt pedestrian or bicycle traffic for more than a few minutes. Additionally, more effective and better signing should be required for pedestrians encountering work zones.

Question #14*: Should more flexibility be allowed on who develops TCPs – State DOTs, municipalities, contractors or law enforcement agencies – and how should the responsibility for developing TCPs be assigned? Should certification be required for TCP developers? How can the owners and contractors share the roles, risk and rewards in developing TCPs and implementing and operating work zones?*

ATSSA's Comment: Certification of all designers of traffic control plans should be required. The use of Continuing Educational Units (CEUs) should be a part of this certification as newer practices in software and devices are developed. The FHWA and state transportation agencies must increase the frequency and scope of training for

those individuals who design traffic control plans if we are to increase safety and mobility in work zones. Again, the implementation of safety and mobility incentives would assist all shareholders (and ultimately the road user) in valuing the need for continuing education and certification.

Additionally, approaches should be developed that allow companies who provide traffic control services and *who are actually on the front line* to provide input to the TCP at the design level. Companies that provide traffic control services have significant "real time" project experience and are very likely to enhance both the safety and mobility aspects of a TCP through the wealth of "hands on" experience they possess. This might be accomplished through an MPO, a cooperative framework of contractor / sub-contractor groups, or through an open-meeting process managed by the project owner.

Question #15*: To ensure roadway mobility and safety and work area safety, should mobility and safety audits be required for work zones?*

ATSSA's Comment: Safety audits should be required for all work zones that have ADTs above 50,000 and where the crash rates are above average for a given geographic area.

Public Outreach and Communications

Question #16*: How can we better communicate the anticipated work zone impacts and the associated mitigation measures to the public? Who – the State, local government, contractor, or other agency – should be responsible for informing the public?*

ATSSA's Comment: To better communicate the anticipated work impacts on businesses and the road user, a crosscutting team comprised of government, MPOs and marketing specialists must be formed to inform the affected population. The responsibility of informing the public should rest with the transportation agency having jurisdiction over the project.

Question #17*: Should projects with substantial disruption include a public communication plan in the project development process? If so, what should such a plan contain?*

ATSSA's Comment: Projects with substantial disruptions should include a public communication plan during the project development process. Elements of this plan should include:

a) length (in time) of the project and by key phasing of the work
b) why the work is being done
c) what benefits the road user will realize after completion of the project
d) what local business can do to reduce congestion
e) translate an understanding of the inherit dangers to the worker and road users in the work zone
f) acceptance of utilizing alternate detour routing
g) a media contact and communications plan
h) specific impacts on all business and property owners affected

Analyzing Work Zone Performance

Question #18*: Should States and local transportation agencies report statistics on the characteristics of work zones (such as number of work zones, size, cost, duration, lanes*

affected, ADT, road classification, level of disruption and impacts on local network and businesses) to appropriate State or Federal agencies? If so, in what ways do you think this would be beneficial?

ATSSA's Comment: States and local transportation agencies should report statistics on the characteristics of work zones to the appropriate agencies. Additionally, better data collection on the performance of a work zone must be required. Comparative analysis of work zone statistics, to a national benchmark, will be the foundation for continually improving mobility and safety in work zones.

Question #19*: Should States and local transportation agencies report statistics on the mobility performance of work zones? Are typical mobility measures, such as delay, travel time, traffic volumes, speed and queue lengths appropriate to analyze work zone mobility performance? What are the top three measures that are most appropriate?*

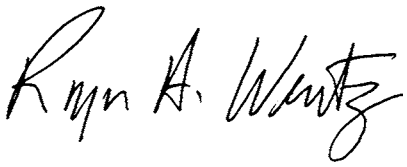
ATSSA's Comment: States and local transportation agencies should report statistics on the mobility performance of work zones. The top three measurements of work zone performance (as listed) should be volume, speed and travel time. If volume and speed data is gathered, then formula driven assumptions can be made on delay times. Travel times, through and around (detours), can be translated into more useful information to the road user when making route decisions.

Question #20*: Are the currently used measures for safety (typically, crashes, fatalities and injuries) appropriate to analyze work zone performance? If not, what other measures should be considered? Are current mechanisms for collecting this information adequate? If not, how can we improve them?*

ATSSA's Comment: The currently used measures for safety (crashes, fatalities and injuries) is good start to quantify the safety performance of the work zone. Additional measures, such as erratic driver behavior (e.g. skid marks and near misses) are indicative of the decreased safety performance of the work zone. The FHWA and the state highway agencies must embrace and integrate emerging technologies to acquire better and more timely data collection. This data collection must focus on both driver behavior and the infrastructure characteristics of the roadway.

Thank you for the opportunity to respond.

Sincerely,



Roger Wentz
Executive Director